DRAFT

COUNCIL AGENDA: 10-18-05
ITEM:

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: Stephen M. Haase
Katy Allen
John Stufflebean

SUBJECT: SEE BELOW

DATE: September 28, 2005

Approved Date

COUNCIL DISTRICT: Citywide
SNI AREA: All

SUBJECT: PROPOSED CITY COUNCIL POLICY ON POST-CONSTRUCTION HYDROMODIFICATION MANAGEMENT

RECOMMENDATION

Adoption of the Council Policy on *Post-Construction Hydromodification Management* to require the management of development-related increases in peak runoff flow, runoff volume and duration ("hydromodification"), where such hydromodification is likely to cause increased erosion, silt pollutant generation or other impacts to beneficial uses of local rivers, streams and creeks.

BACKGROUND

Under the provisions of the Federal Clean Water Act, the San Francisco Bay Regional Water Quality Control Board (RWQCB) has jurisdiction over stormwater programs for nine Bay Area counties including Santa Clara County. The RWQCB issues NPDES permits that stipulate water quality requirements for dischargers to the San Francisco Bay and its tributaries. The RWQCB issues an NPDES Municipal Separate Storm Sewer System Permit (Permit) to the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), consisting of the City of San Jose and 14 other local jurisdictions ("Co-permittees"). The other Co-permittees include the County of Santa Clara, twelve other municipalities in the county, and the Santa Clara Valley

Water District. These Co-permittees are also referred to as the Dischargers. Together the 15 Co-permittees constitute the SCVURPPP.

RWQCB Permit

In October 2001, the RWQCB issued a revised NPDES permit to the Program (Order No. 01-119) and on July 20, 2005 the Permit was further amended by the RWQCB (Order No. R2-2005-0035). Those revisions amended provision C.3 of the Permit and established new requirements for control of runoff from development projects—both public and private— through the implementation of stormwater control measures using specific sizing requirements to: (1) minimize the discharge of pollutants from impervious (e.g. paved) surfaces; and (2) minimize the impacts of increased stormwater runoff flows and velocities on local creeks.

On October 7, 2003, February 15, 2005, and May 17, 2005, Council revised the City's existing *Post Construction Urban Runoff Management Policy* (Policy 6-29) to address Permit requirements for minimizing the discharge of pollutants from impervious surfaces. The July 20, 2005 RWQCB Order does not require any further action by Council at this time with respect to pollutant control measures. On April 19, 2005, the Council also approved the Hydromodification Management Plan (HMP) Final Report, which was prepared for SCVURPPP, to meet the Permit's hydromodification control measure requirements.

The July 20, 2005 Permit amendment requires the City to implement the HMP for new and redevelopment projects that add or replace one acre or more of impervious surface area ("Group 1 Projects") by October 20, 2005. The Permit allows certain projects to be exempt from HMP requirements, including projects that discharge to channels that are hardened to the Bay, projects located in areas that are influenced by tidal activity, and infill projects located in highly developed watersheds. In addition, individual projects may be exempted from HMP requirements based on a finding that the project will have minimal if any impact on beneficial uses.

What is Hydromodification?

In general, urbanization modifies natural watershed and stream processes by altering the terrain, modifying the vegetation and soil characteristics, introducing impervious surfaces such as pavement and buildings, and altering the condition of stream channels through straightening, deepening, and armoring. These changes affect hydrologic characteristics in the watershed and affect the supply and transport of sediment in the stream system.

As the total area of impervious surfaces increases in previously undeveloped areas, infiltration of rainfall decreases, causing more water to run off the surface as overland flow at a faster rate. Storms that previously did not produce runoff under rural conditions can produce erosive flows in creeks. This process is defined as "hydromodification." The increase in the volume of runoff and the length of time that erosive flows occur ultimately intensifies sediment transport, increasing creek scouring and erosion and causing changes in stream shape and conditions, which can, in turn, impair the beneficial uses of the stream channels.

How to Control Hydromodification

There are various methods for controlling hydromodification. These include implementing hydromodification control measures (HCMs) (1) on a project site, (2) offsite at a separate location within the same watershed, or (3) directly in the stream affected by the project. In most cases flow control is achieved on site, using basins or other detention facilities. Most of the measures are consistent with and compatible with the site design and stormwater treatment measures required for development projects by Permit Provision C.3 and City of San Jose Council Policy No. 6-29.

The option of controlling hydromodification through in-stream measures and offsite measures is included in the HMP report and acknowledged in the Policy; however, implementation of these options requires further coordination among the City, developers, and the Santa Clara Valley Water District, both for defining the measures and establishing an appropriate funding mechanism. Although City staff and District staff have been meeting on this issue, it is not anticipated that any in-stream measures will be in place in the early stages of HMP implementation, and offsite measures are likely only to be available in the context of large-scale planning efforts such as Coyote Valley.

Stormwater control measures such as detention basins require ongoing operation and maintenance in order to be effective. For detention basins, maintenance generally involves the removal of sediment and debris from outlet control structures, removal of litter from the operating area of the facility, grass mowing and related landscaping activities, fencing repairs, and the graveling and grading of access roads. The most significant item is anticipated to be landscape maintenance.

Examples of similar detention facilities have been constructed for flood control in San Jose, such as within Communications Hill, but because HMP basins are designed to address smaller and more frequent storms, the maintenance implications of their more frequent use is not well documented. Therefore, San Jose and the other jurisdictions in the Santa Clara basin will be "piloting" flow control in Northern California and the San Francisco Bay RWQCB jurisdiction.

ANALYSIS

Summary of Policy

The proposed *Post-Construction Hydromodification Management Policy* (see Attachment 1) would supplement the existing *Post Construction Urban Runoff Management Policy* (Policy 6-29) by requiring hydromodifcation control measures (HCMs) in specified development projects.

Key Provisions

The key provisions of the Policy are (1) General Guidelines, (2) Performance Criteria, (2) and (3) Cost Considerations.

General Guidelines

The Policy establishes the following general guidelines:

- No development related increases in the erosion potential of the receiving stream over the pre-project (existing) condition, where such increase is likely to impact beneficial uses;
- All Group 1 Projects are encouraged to install Post-Construction HCMs;
- Projects which are also required to install post-construction treatment control measures (TCMs) under Policy 6-29 are encouraged to install TCMs with flow control benefits;
- The limitations on the use of infiltration measures and groundwater protection measures contained in Policy 6-29 shall apply to infiltration based HCMs;
- Post-construction HCMs may include a combination of on-site, off-site (same drainage area) and in-stream measures; and
- All post-construction HCMs must be maintained to operate effectively.

Performance Criteria

The Policy establishes three tiers of performance criteria for: (a)large projects (on sites greater than 20 acres); (b) smaller projects (on sites less than 20 acres); and (c) impracticability due to cost considerations.

Full Flow Duration Control - For projects located in relatively undeveloped subwatersheds, such as the eastern fringe of the City and Coyote Valley, the Policy would require all projects located on sites equal to or greater than 20 acres to match pre-project erosion potential by controlling both the volume and duration of stormwater runoff—a concept called "flow duration control." Essentially, flow duration control requires the post-project runoff pattern to match the pre-project runoff pattern. Generally, a detention basin or underground vault of some type would be required to meet this criteria and extensive modeling will be required to demonstrate compliance. These same criteria would apply to the largest sites (50 acres and above), in subwatersheds that have a significant level of existing development (90% or greater built out and 65% or less existing impervious surface area).

Small Projects - The HMP Final Report and the Permit recognize, however, that it is not practicable for all projects to match pre-project runoff rates. The Policy would therefore establishes two other tiers of performance criteria, which apply to "Small Projects" (project site size of less than 20 acres) and projects where matching pre-project runoff rates is found to be "impracticable" because the overall cost of stormwater control measures exceeds 2% of project construction costs.

The Policy would require Small Projects to provide flow control through the use of appropriate site design, source control, and treatment control measures with flow control benefits to the maximum extent practicable, and where available to use off-site and/or in-stream controls for flow control. This criteria would allow Small Projects to use small scale, distributed stormwater management techniques such as bioretention facilities, infiltration trenches, filter strips, vegetated swales and multi-functional landscape areas to achieve treatment and flow reduction and would permit these projects to demonstrate compliance based on a discrete storm event rather than through modeling of the runoff pattern.

Cost Considerations

The Policy establishes both a standard for defining when excessive costs may make compliance impractical, and special performance criteria for projects that demonstrate impracticability based on cost. If the combined construction cost of both required HCM and TCM measures exceeds 2% of the project construction cost (excluding land costs), based on cost documentation submitted by the Project developer, the City may determine that compliance with the first two tiers of performance criteria is impracticable. A finding of impracticability does not exempt the project from any implementing flow control, however. Where a finding of impracticability based on costs is made, the project must include such HCM control measures on-site and contribute to such in-stream or off-site HCM measures as may be available, to the extent such measures can be provided, along with all required TCMs for 2% or less of project costs.

Exemptions

The Policy incorporates an HMP Map that illustrates how the Performance Criteria apply in different areas of the City. Under the Policy, a project would be exempt from HMP requirements if it meets any of the following conditions:

1) The project does not increase the impervious area of a site. An example would be commercial centers that were constructed prior to current landscape standards that are generally characterized by large surface parking lots, single-story buildings, and limited landscape areas. If these sites redevelop, the projects would be subject to current landscape standards, and consequently the redevelopment is likely to result in less impervious surface than the existing condition.

2) The project discharges to a stream segment that is either tidally influenced or hardened to the Bay. Such projects discharge to areas that are not susceptible to erosive impacts from increases in flows from development. These areas are depicted on the HMP Map attached to the Policy.

3) Projects draining to an underground storm drain that discharges directly to San Francisco Bay.

4) Projects that demonstrate, upon completion of stream-specific and modeling studies that are consistent with the method used in the HMP Report and its supporting technical documents, that there will be no increase in potential for erosion or other adverse impact to beneficial uses to any State Waters.

OUTCOMES

The *Post Construction Hydromodification Management Policy* has been structured to address the new HMP requirements in the NPDES Permit and proposes implementation of flow-control measures to protect local streams from erosion impacts as specified by Provision C.3.f of the Permit. If adopted by Council, the Policy would be used to implement the HMP requirements.

COST IMPLICATIONS

City Staffing

Significant cost increases associated with implementation of the NPDES Permit C.3 provisions (including the HMP) had been projected for FY 05-06, impacting several City departments. These cost increases have been addressed for the current year within the FY 2005-2006 Adopted Operating Budget. Where control measures are to be publicly owned and operated, funding sources to cover maintenance costs must be identified. To address ongoing staffing implications, staff will continue to collect data on the time required to implement the C.3 Provision requirements in anticipation of proposing future changes to fee programs.

PUBLIC OUTREACH

Planning staff sent a hearing notice for the proposed Policy by e-mail to developers, consultants, engineers, representatives of environmental groups, and other stakeholder groups. Additional outreach consisted of posting the availability of the hearing notice on the Planning Divisions' web page and emailing the web page address to Bay Area representatives of stakeholder groups.

Planning staff has also prepared informational fact sheets on the proposed HMP Policy. These fact sheets have been distributed along with copies of the RWQCB Order at the Planning Divisions' Developer Roundtable meeting on August 26, 2005 and a copy of the Draft HMP Policy was distributed at the September 30, 2005 Developer's Roundtable.

A copy of the Revised Policy was sent to the RWQCB on September 30, 2005.

COORDINATION

Preparation of the HMP and this recommendation were coordinated with the Redevelopment Agency and the City Attorney's Office.

CEQA

Exempt: File No. PP 05-179.

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Attachment 1: Draft Hydromodification Management Policy
Attachment 2: HMP Map identifying specific implementation areas for San Jose
Attachment 3: Revised Technical Order No. R2 2005-0035 including Attachment A